

Figure 1A

360

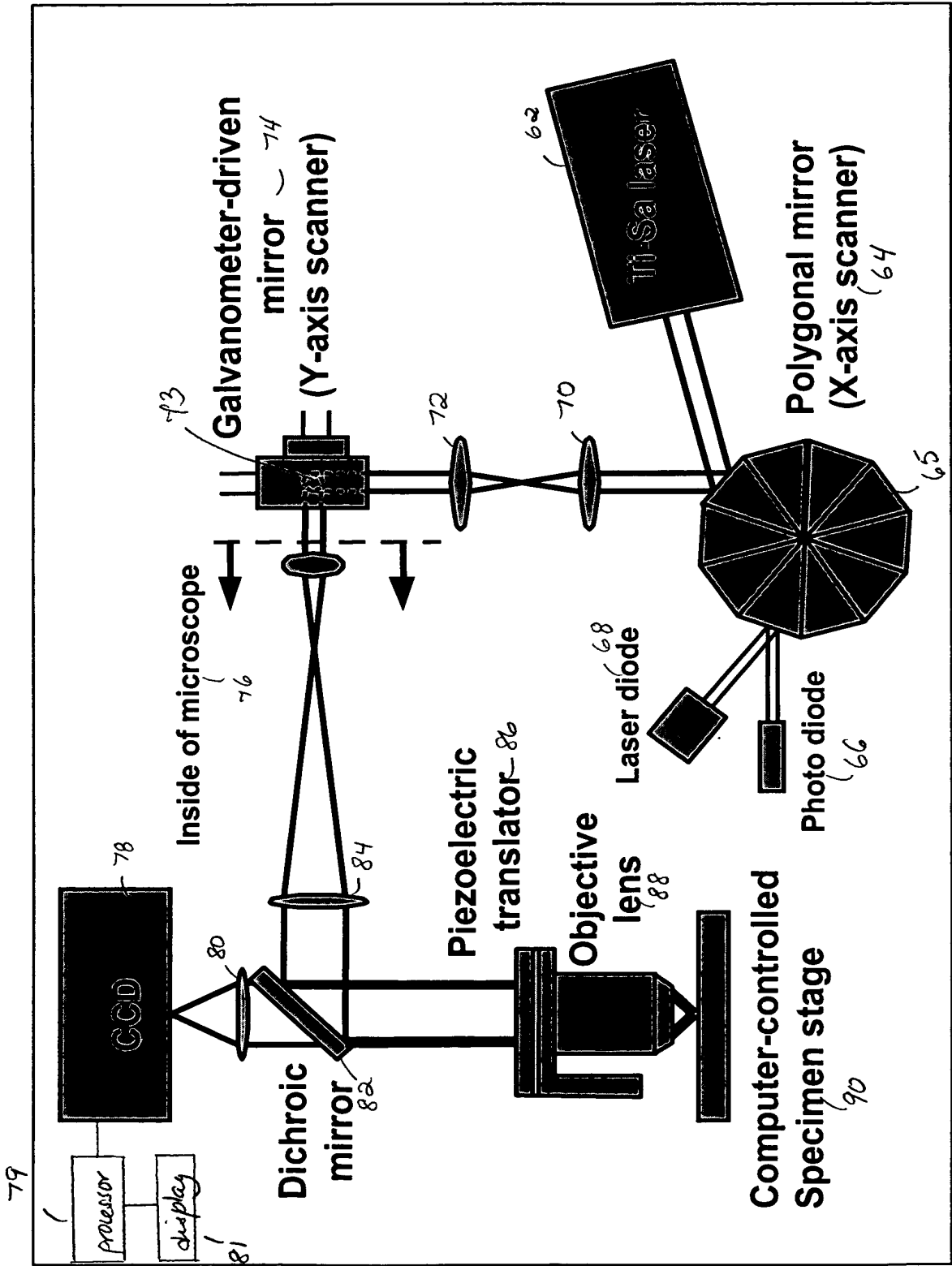


Figure 1B

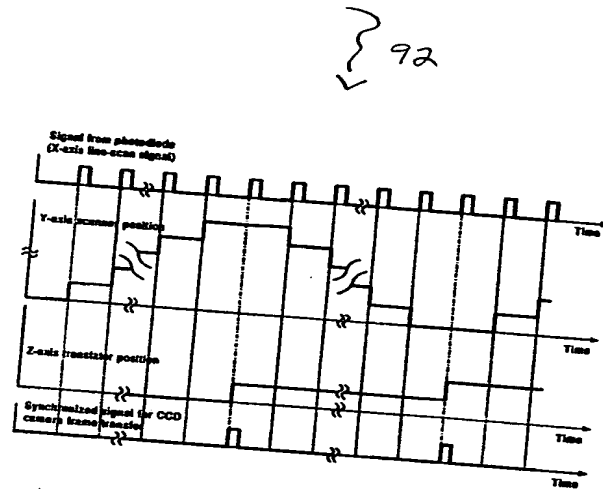
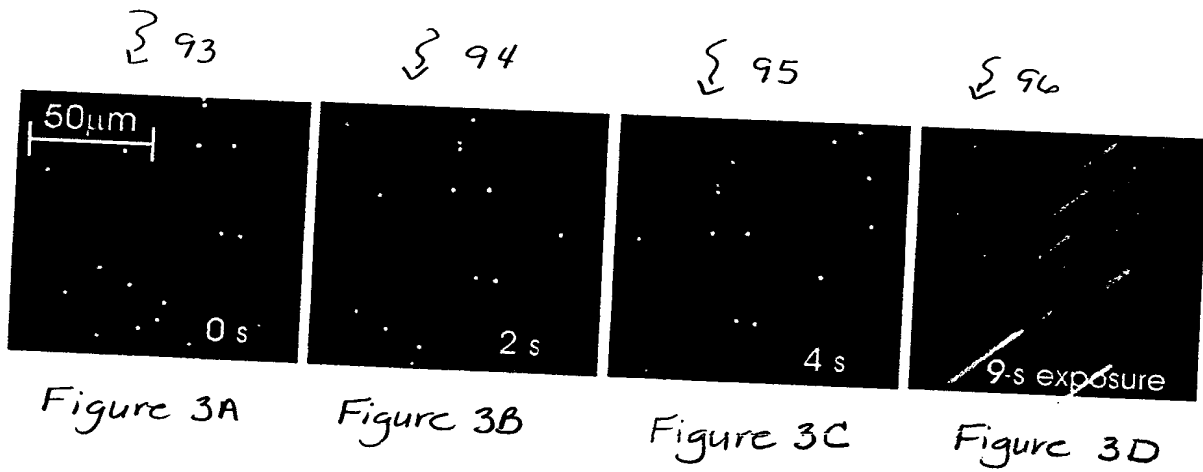


Figure 2



{ 97

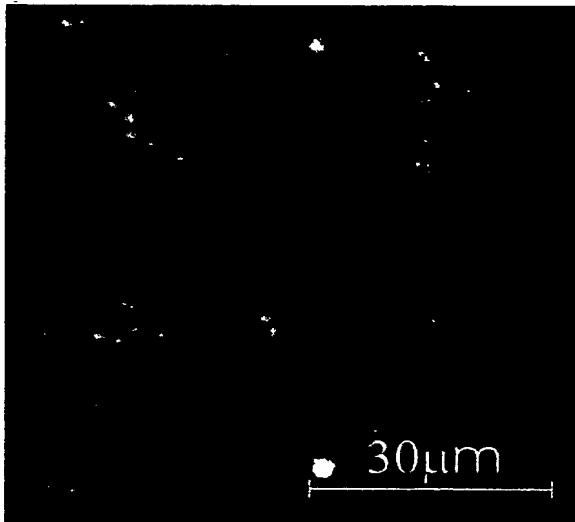


Figure 4A

{ 98

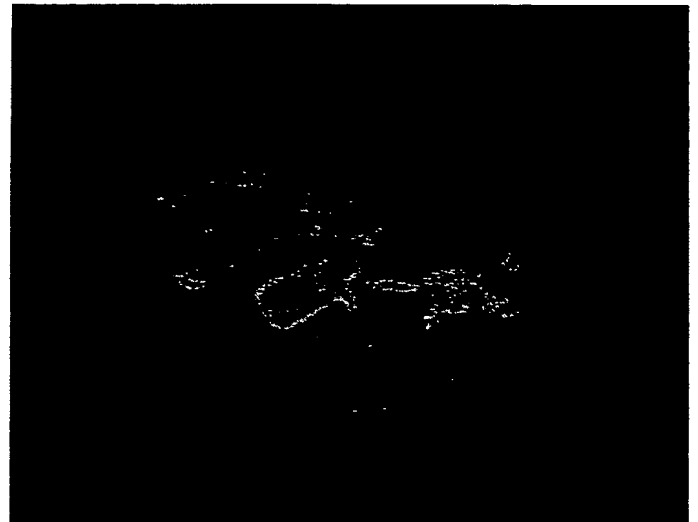


Figure 4B

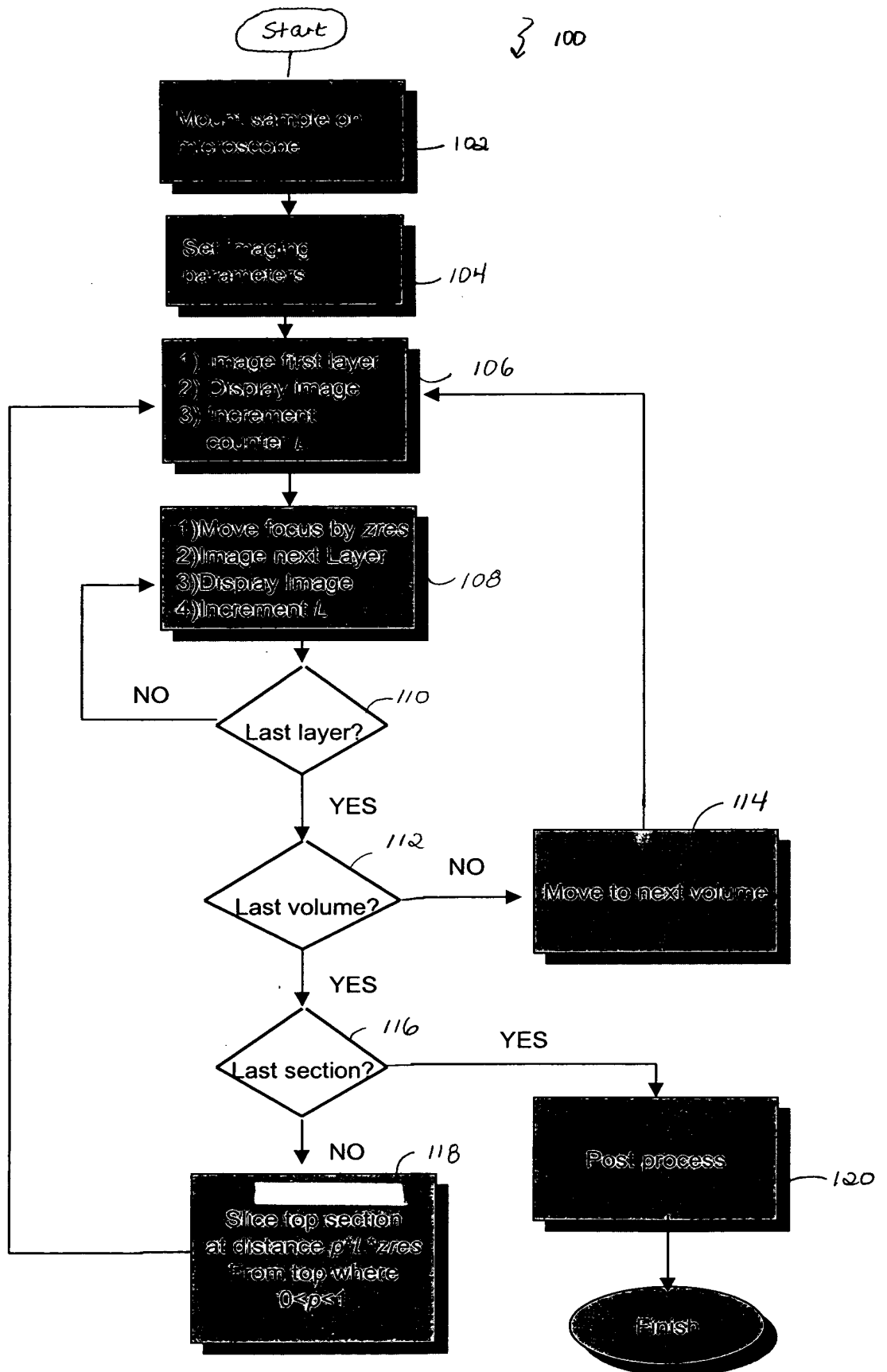


Figure 5

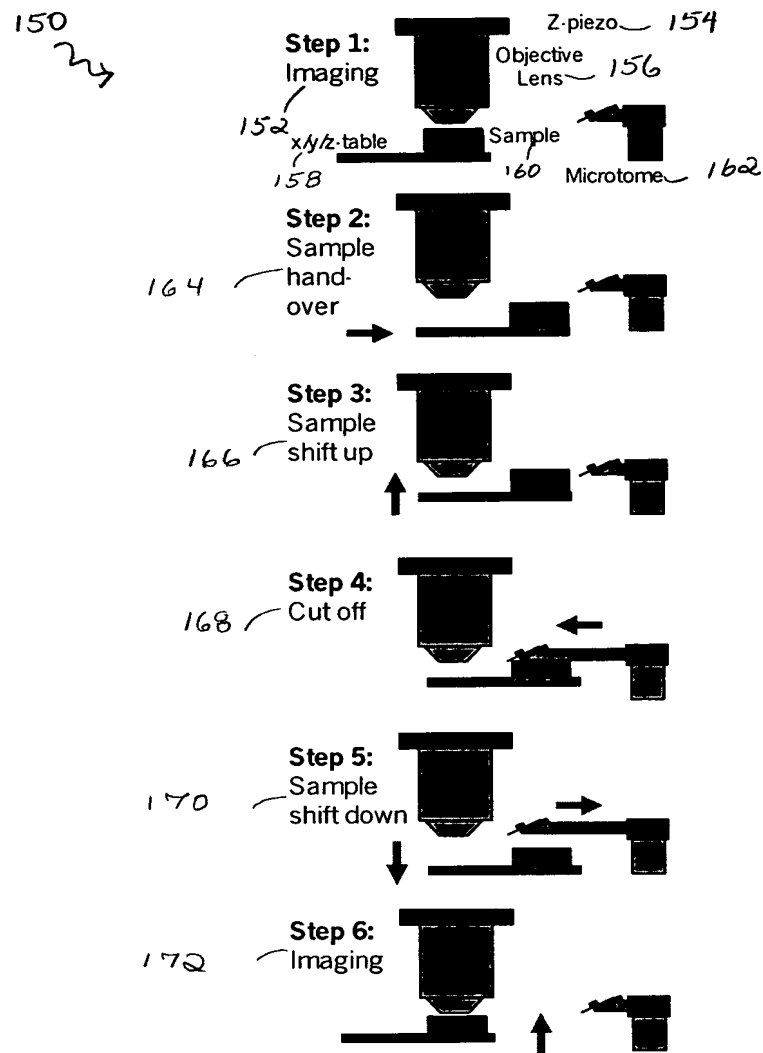


Figure 6

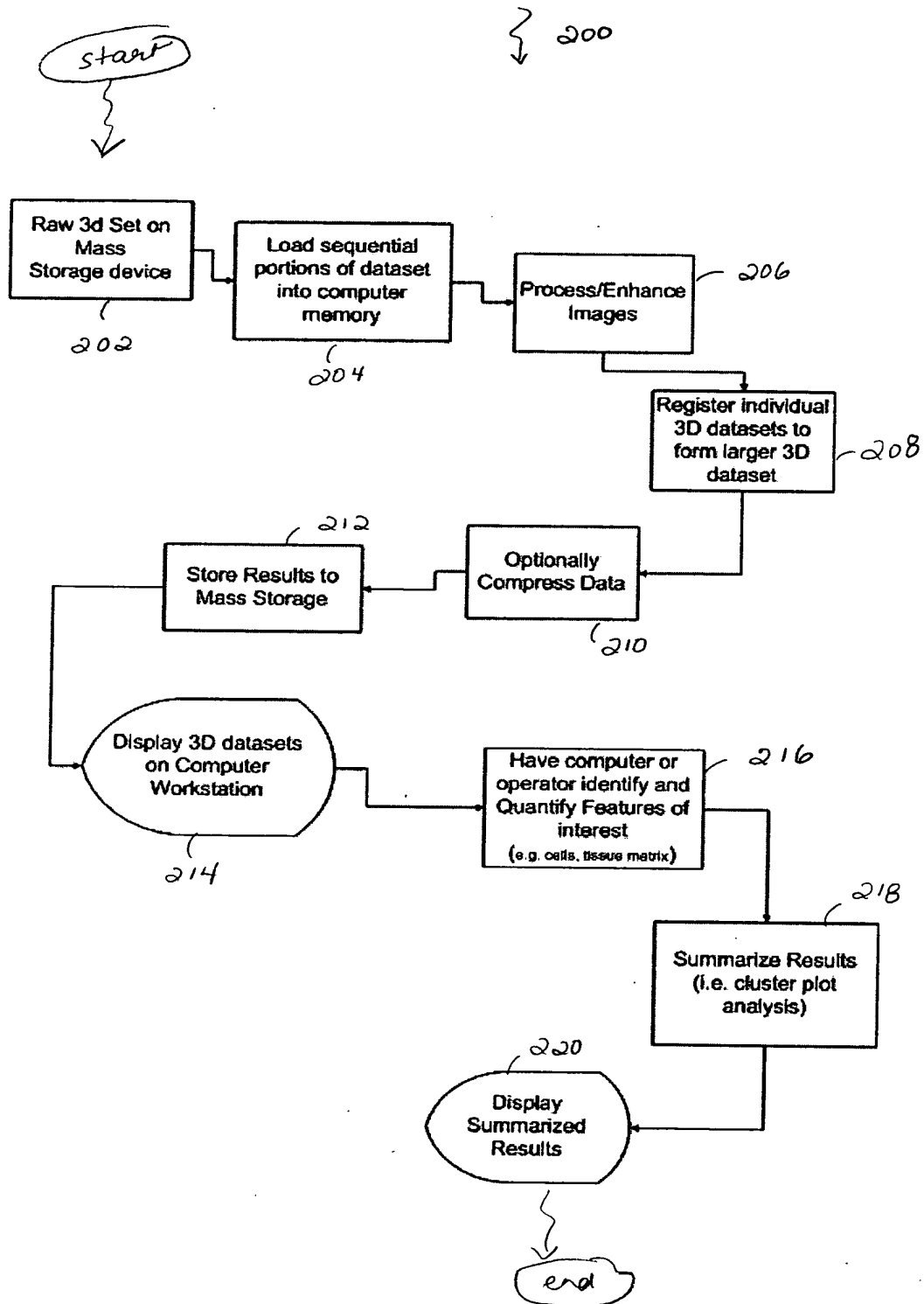


Figure 7

Figure 8A

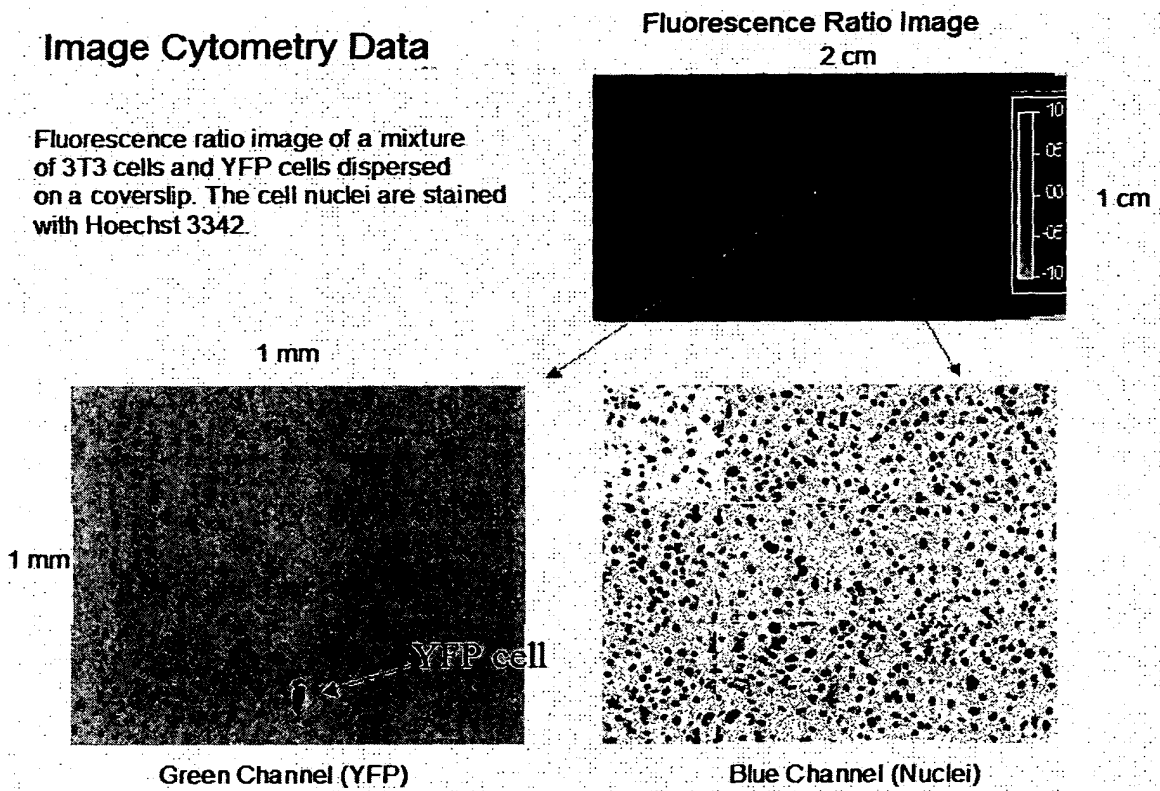


Figure 8B

Figure 8C



## High Resolution Volumetric Imaging of Mouse Brain

A mouse was genetically engineered to co-express GFP along with actin in the brain. The brain was excised and then fixed in 4% paraformaldehyde and then embedded in paraffin.

### Imaging Parameters:

1  $\mu\text{m}$  xy resolution; 3  $\mu\text{m}$  z resolution

Eighteen 60  $\mu\text{m}$  microtome sections

Imaging Time: 45 minutes

Approximately  $1 \times 10^5$  cells

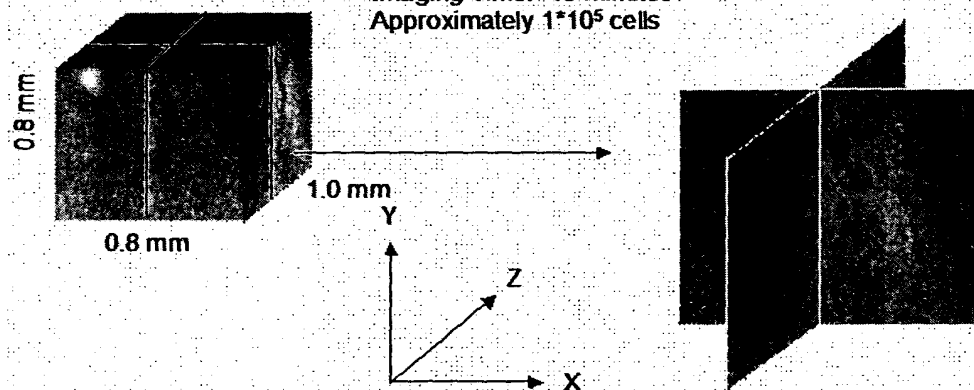


Figure 9A

Figure 9B

## Data Analysis

A segmentation of the images is performed and the nuclei are categorized by several parameters:

### Parameter Set

- 1) Nuclear Area
- 2) Nuclear Circularity
- 3) Fluorescence Ratio
- 4) YFP (green channel) intensity

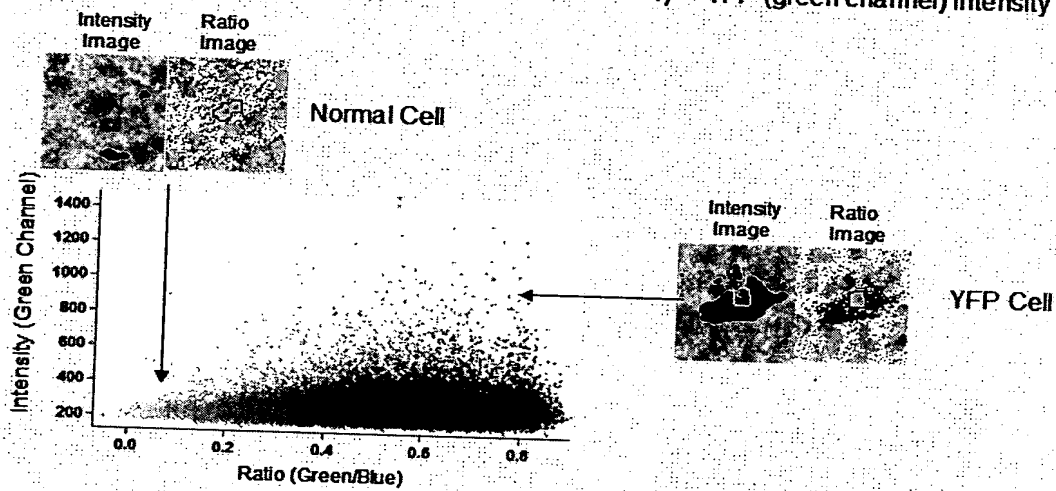


Figure 10

Figure 11A

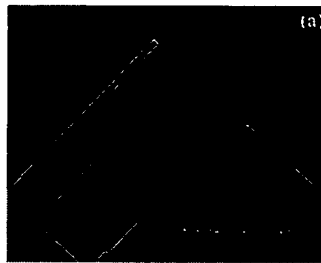


Figure 11B



Figure 11C

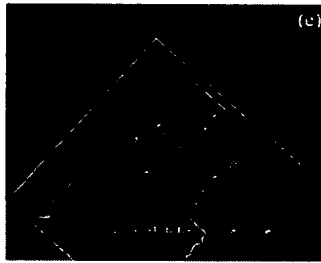


Figure 11D



Docket No.: 301505.3005-100

Inventors: Peter So et al.

Title: Systems and Methods for Volumetric Tissue Scanning  
Microscopy

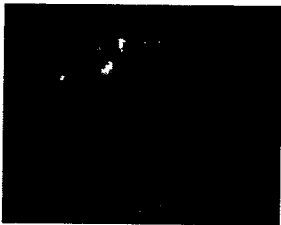


Figure 12A

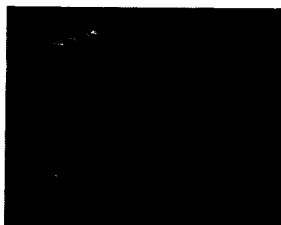


Figure 12B



Figure 12C



Figure 12D



Figure 12E

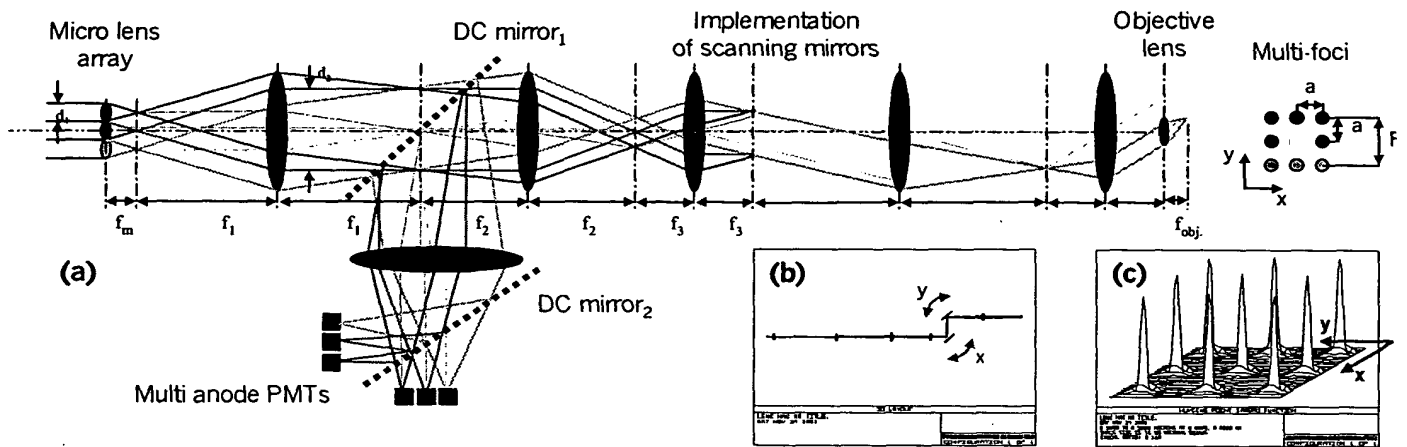
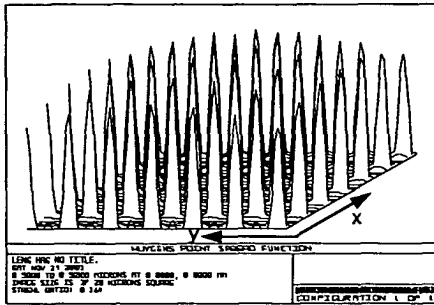


Figure 13A

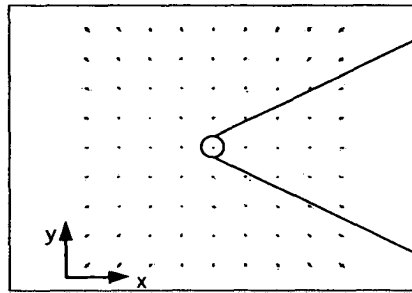
Figure 13B

Figure 13C



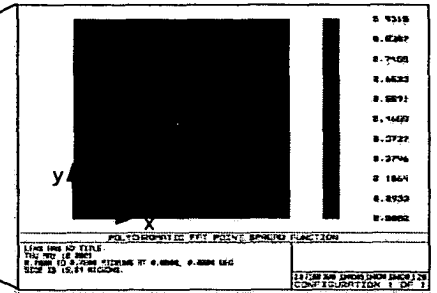
(a)

Figure 14A



(b)

Figure 14B



(c)

Figure 14C